UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1998-0928

February 24, 1998

Colonel Robert T. Slusar
U.S. Army Corps of Engineers
ATTN: Rock Peters
P.O. Box 2946
Portland, Oregon 97208-2946

Re: Consultation on Partial Removal of Elk Creek Dam, Rogue Basin, Oregon

Dear Colonel Slusar:

This responds to your January 6, 1998 Biological Assessment (BA) on the Corps of Engineers' (Corps) proposal to restore fish passage through Elk Creek Dam in Jackson County, Oregon. The BA was received by the National Marine Fisheries Service (NMFS) on January 7, 1998. The proposed action is to partially remove the dam. NMFS has listed Southern Oregon/Northern California coho salmon (SONC coho) in the Rogue River Basin as threatened under the Endangered Species Act (ESA) (May 6, 1997; 62 FR 24588), and SONC coho critical habitat has been proposed (November 25, 1997; 62 FR 62741). In addition, Klamath Mountains Province (KMP) steelhead were proposed for listing as threatened under the ESA by NMFS on March 16, 1995 (60 FR 14253; August 9, 1996, 61 FR 41541). The Rogue River runs of SONC coho and KMP steelhead are seriously affected by Elk Creek Dam. SONC coho critical habitat encompasses the project area, including Elk Creek watershed above it.

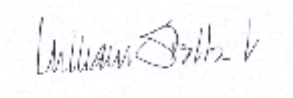
NMFS commends the Corps for your commitment to resolving this languishing fish passage and aquatic habitat problem in Elk Creek, and we support the proposed action described in the BA to partially remove this project in order to restore anadromous salmonid fish passage. While this project will benefit all anadromous salmonids in the project area and their habitat, the proposed action is likely to result in the incidental take of some SONC coho individuals due to in water work, short-term turbidity, and sedimentation. We agree

that this incidental take is unavoidable and has been minimized by project design.

Sedimentation, turbidity, and anadromous salmonid populations in the project area will be closely monitored before, during, and after the proposed action is carried out, as described in the additional information you provided on February 6, 1998, and in the enclosed biological opinion and incidental take permit.

Please contact Lance Smith at (503) 231-2307 of my staff with any questions regarding this project.

Sincerely,



William Stelle, Jr.
Regional Administrator

Enclosure

cc: Ron Garst (USFWS, Portland)
Tom Satterthwaite (ODFW, Grants Pass)
Mike Evenson (ODFW, Central Point)

Endangered Species Act - Section 7
Consultation

BIOLOGICAL OPINION

Effects of Partial Removal of Elk Creek Dam
on Southern Oregon/Northern California Coho Salmon,
Klamath Mountains Province Steelhead, and
Southern Oregon/Northern California Coho Critical Habitat,
Jackson County, Oregon

Agency: U.S. Army Corps of Engineers

Consultation
Conducted By: National Marine Fisheries Service
Northwest Region

Date Issued: February 24, 1998

Refer to: OSB1998-0928

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I. Background

This responds to your January 6, 1998, letter and Biological Assessment (BA) requesting consultation on the effects of the Corps of Engineer's (Corps) proposed partial removal of Elk Creek Dam in the Rogue Basin in Southwest Oregon. The letter was received by the National Marine Fisheries Service (NMFS) on January 7, 1998. Southern Oregon/Northern California coho salmon (SONC coho) were listed as threatened under the Endangered Species Act (ESA) on May 6, 1997 (62 FR 24588, May 6, 1997) and occur in the mainstem Rogue River and in Elk Creek. Critical habitat for SONC coho was recently proposed (November 25, 1997; 62 FR 62741) and is described in Attachment 1. Klamath Mountain Province (KMP) steelhead have been proposed for listing as threatened under the ESA by NMFS (March 16, 1995, 60 FR 14253), and the final decision whether to list this species has been deferred to February 1998 (August 18, 1997, 62 FR 43974). KMP steelhead occur throughout the Rogue River Basin, including Elk Creek.

The Corps proposes to partially remove the uncompleted Elk Creek Dam located on Elk Creek 1.7 miles above its confluence with the Rogue River, and the confluence of Elk Creek with the mainstem is at river mile 152 of the Rogue River. Construction of the dam was halted by court order in 1987 after dam height reached 83 feet. The proposed partial removal consists of complete removal of the spillway structure, partial removal of the dam embankments, and restoration of Elk Creek to approximately its original alignment and gradient within the project area. The purpose of the proposed action is to restore fish passage at the site. The existing structure blocks upstream fish passage, and a trap-and-haul system is being used to pass fish upstream past the project.

The objective of this biological opinion is to determine whether the proposed partial removal of Elk Creek Dam is likely to: (1) jeopardize the continued existence of SONC coho, listed as threatened, and KMP steelhead, proposed as threatened, and (2) result in the destruction of adverse modification of SONC coho proposed critical habitat.

II. Proposed Action

General Description. The proposed action is to remove a portion of the roller compacted concrete dam and spillway structure and realign the Elk Creek channel to its original alignment and gradient for the purpose of restoring fish passage through the project area. Rerouting the stream through the dam will require demolition of approximately 50,000 cubic yards (cy) of roller compacted concrete and approximately 15,000 cy of conventional concrete. Realignment of the stream and local grading will require approximately 275,000 yd^3 of cut and fill and approximately 1,000 yd^3 of rock excavation. The length of affected stream is approximately 5,000 feet. Bank protection may be required and may include as much as 5,000 cy of revetment. Revegetation for slope stability and streambank erosion control is also included in the proposed action. The design is to provide a fish passage corridor in a stream that is geomorphically balanced as much as is reasonably possible immediately following construction. In-stream design features such as rock weirs would maintain water velocities in ranges

acceptable for passage of anadromous fish. The plan would also utilize a portion of the existing tailrace to create a backwater area. This backwater would provide over-winter habitat for juvenile coho and steelhead.

Worksite Preparation. All work outside of the Elk Creek channel, including clearing of brush and trees, moving construction equipment to the project site, constructing temporary buildings, hooking up utilities, developing haul roads, refurbishing bridges, installing diversion pipes for Elk Creek, and installing pollution control will be done between March 3 and June 14, 1998, with the exception noted below in "Work Windows". Starting June 15, 1998, instream worksite preparation will be carried out, including removal of debris from the stream and diversion of Elk Creek through diversion pipes around the worksite.

Care and Diversion of Water. Elk Creek will be diverted around the project during the removal through diversion pipes, which will be installed from March 6 to June 29, 1998. The discharge portals for the pipe will be installed during the first few days of the inwater work period. A levee and diversion plug will be built on the left bank (south) to elevation 1530 fsl (feet above sea level). These pipes will completely divert water and fish around the project during construction. Design of the piping will require maintaining adequate depth and velocities in the pipe to accommodate juvenile and adult salmonid passage downstream. Specific criteria for passage of fish include: (1) Diversion system will provide passage conditions suitable from 10 ft^3/second (cfs) to 300 cfs which will cover normal flows anticipated for the June through October time period; (2) Minimize hydraulic jumps in the pipe system - velocities approaching the jump will be less than 25 feet per second (fps) with a froude number less than 2.5; (3) Pipeline absolute pressures will not go below ½ atmosphere or 7.4 pounds per square inch at any location in the pipe within the design flow range; (4) The minimum design flow depth within any of the pipes will not be less than 4 inches of water along the entire pipe system; (5) The maximum water velocity entering the plunge pool on exit will not exceed 25 fps with a minimum receiving pool depth of 3 feet; (6) The water will exit the diversion pipe horizontally into the plunge pool; and (7) No closure valves will be allowed in the pipeline.

Demolition of Concrete Structures. The restoration of Elk Creek to approximately its original channel entails the removal of the spillway, the left abutment of the dam, the foundation slab just upstream of the spillway, requiring the demolition of an estimated 65,000 $yards^3$ (cy) of concrete. Holes will be drilled in the concrete before the blasting work window (6/15-9/15, see below), and blasting will commence between June 15 and July 15, 1998. Also on or near June 15 it will be necessary to mechanically demolish the trap and haul facility and fish weir. Additional work includes the left abutment downstream toe and gallery drain excavation and removal, and removal of all electrical and mechanical devices from the gallery (valley gallery) and left abutment.

Site Grading, Bank Protection, and Demobilization. A stream flow training wall is required in the former tailrace from the dam structure to the current location of the weir to recreate channel conditions that existed there before the project. The training wall could require as much as 14,000 cubic yards of

revetment and impermeable core materials. The Elk Creek channel will be graded from this point to approximately 5,000 feet upstream, and up to 5,000 cy of revetment may be used for bank protection in this reach. The streambanks in this area will be revegetated for slope stability, and other streambank erosion control measures may be implemented. Boulders, root wads, and rock weirs with one foot drops will be placed in the stream channel to provide instream structure and good passage conditions. The stream will then be diverted from the diversion pipe into the new channel. All buildings, utilities, fuel depots, restored haul roads, construction bridges, and the diversion pipes will be removed by October 15, 1998.

Work Windows. A November 5, 1997, joint letter from NMFS/ODFW/USFWS/USFS/BLM to the Corps agreed to extend the blasting work window of 7/15-9/15 to 6/15-9/15, and the inwater work window of 6/15-9/15 to 6/15-10/15. The standard inwater work window of 6/15-9/15 protects adult coho that move up into the Rogue River tributaries starting in late September during years when it begins to rain earlier than usual (normally coho do not move into tributaries until mid-October). If adult coho move up into the project area before mid-October, it is unlikely that they would attempt to spawn in the project area due to lack of spawning gravels, thus effects of the inwater work would be limited to scaring them from one holding position to another. While NMFS prefers to avoid these effects, we are of the opinion that extending the work window into October and completing the dam removal in one construction season would be less harmful to coho than prolonging the removal for a second season.

Monitoring. Sediment dynamics will be monitored before and after the construction phase of the removal to ensure that; 1) fish passage is not negatively impacted for a prolonged period due to sediment and debris blockages, and 2) Elk Creek maintains its flood carrying capacity in relation to its floodplain in areas affected by the project. The purpose of this monitoring is to provide a qualitative analysis of sediment dynamics, not to determine the quantity of sediment produced by the project. Monitoring will provide detail to analyze system responses to project implementation and to determine corrective actions if deemed necessary for adverse conditions.
Primary sediment surveys will be performed at approximately six locations scattered upstream, within, and downstream of the project, and include cross-section surveys, photographic recording, sediment sampling and gradation analysis. Primary surveys will take place once per year in June to July, starting in 1998 and continuing for at least five years.

Secondary sediment surveys will also be performed at locations upstream, within, and downstream of the project. Secondary surveys will include photographic recording and field observation only. Approximately twelve locations differing from locations chosen for primary surveys will be designated based on expected depositional and erosion patterns. Secondary surveys will take place during the primary survey period, immediately following peak flow events greater than or equal to the 2-year frequency of occurrence, and after any significant morphological changes have occurred within the project following an event less than the 2-year frequency of occurrence. Secondary surveys will take place at the same defined areas each year and at any areas where significant morphologic changes have occurred during the monitoring period. During the high-flow season, these surveys will be used to

determine if corrective actions are necessary in order to maintain project objectives. Secondary surveys need to take place as early as possible to ensure that there is adequate time to perform any necessary corrective actions within the in-water work period, and these surveys will continue for at least five years after project completion. The results of the primary and secondary sediment surveys will be reported annually, and these annual reports will include gradation analysis, cross-sectional comparison, photographic record, engineering analysis of data, and recommendations for future actions if necessary.

Turbidity will be monitored during and after the construction phase of the removal. The project's NPDES permit stipulates that turbidity of Elk Creek shall not exceed 10 % above the natural turbidity. During construction, measurement of turbidity shall be performed at points 100 feet above and below the work. Turbidity measurements shall occur at least every four hours during inwater work and for a period of two weeks following the last inwater work. Erosion control measures will be constantly monitored during construction, and any activity causing exceedance of turbidity criteria will be immediately modified to reduce turbidity. If exceedences occur, the monitoring frequency shall be every two hours until the problem is resolved. If two consecutive exceedences are recorded, the activity causing the turbidity shall be stopped until the problem is resolved. Turbidity monitoring results shall be provided weekly to the Oregon Department of Environmental Quality (ODEQ). Following construction, turbidity will be monitored at two sites on Elk Creek, one several miles above, and one just below the project, for a period of 18 months. Most of the historical turbidity in Elk Creek, resulting from fine-grained sedimentary material, is associated with the watershed above the upper monitoring site. These two sites will therefore help differentiate turbidity attributable to the watershed above the project versus that from the project.

After completion of the construction phase of the project, SONC coho passage success through the project area will be indirectly monitored by determining the upstream limits of SONC coho fry above the project in the upper Elk Creek watershed. The Oregon Department of Fish and Wildlife (ODFW) surveyed streams in this area in 1996 and 1997, and found that the upstream limits of SONC coho fry did not vary widely between years. These results suggest the distribution of SONC coho fry in 1996-98 (ODFW will also sample in 1998) can be used as a benchmark by which to determine whether this species passes the construction area and spawns in widely distributed areas of the Elk Creek Basin. Thus, the upstream limits of SONC coho fry distribution will be determined with snorkel surveys on an annual basis in June or July of 1999 - 2004. KMP steelhead fry distribution cannot be determined with this method because they are not distinguishable from resident rainbow trout fry.

III. Biological Information and Critical Habitat

The listing status and biological information for SOSC coho and KMP steelhead are described in Attachment 1. Critical habitat has been proposed for SONC coho and is described in Attachment 1.

IV. Evaluating Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA, 16 U.S.C. 1536(a)(2), and implementing regulations at 50 CFR Part 402. Attachment 2 describes how NMFS applies the ESA jeopardy standards to consultations on Federal actions.

As described in Attachment 2, the first steps in applying the ESA jeopardy standards are to define the biological requirements of the ESU and to describe the listed species' current status as reflected by the environmental baseline. In the next steps, NMFS's jeopardy analysis considers how proposed actions are expected to directly and indirectly affect specific environmental factors that define properly functioning aquatic habitat essential for the survival and recovery of the species. This analysis is set within the dual context of the species' biological requirements and the existing conditions under the environmental baseline (defined in Attachment 1). The analysis takes into consideration an overall picture of the beneficial and detrimental activities taking place within the action area. If the cumulative actions are found to jeopardize the listed species then NMFS must identify any reasonable and prudent alternatives to the proposed action.

A. Biological Requirements

For this consultation, NMFS finds that the biological requirements of the listed/proposed ESUs are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the ESUs. Individual environmental factors include water quality, habitat access, physical habitat elements, channel condition, and hydrology. Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are also necessary for the survival and recovery of the listed/proposed ESUs. This information is summarized in Attachment 1.

B. Environmental Baseline

Current range-wide status of ESUs under environmental baseline. NMFS described the current population status of the SONC coho and KMP steelhead ESUs in its status reviews (Weitcamp et al. 1995, Busby et al. 1994, Busby et al. 1996) and in the SONC coho final listing rule (62 FR 24588, May 6, 1997) and the KMP steelhead proposed listing rule (March 16, 1995, 60 FR 14253). The fish counts at Gold Ray Dam (28 miles downstream on the mainstem Rogue River at river mile 126) provide the best quantitative source of information available on SONC coho and KMP steelhead abundance in the Rogue River Basin. However, for the purposes of this biological opinion, it is difficult to determine the population status for the environmental baseline assessment of the entire ESUs based only on Gold Ray Dam fish counts because this dam is located on the Rogue River but the ESUs occupy areas several times larger than the Rogue Basin. In the absence of adequate population data, habitat condition provides a means of evaluating the status of SONC coho and KMP steelhead for the environmental baseline assessment, as explained in Attachment 1.

Action Area. The "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." (50 CFR 402.02). The action area for this project includes the originally planned pool area for Elk Creek Dam Reservoir, the partially completed dam structure itself, Elk Creek downstream of the dam, and all sections of the Elk Creek watershed what would be affected by the project such as the access road and the work area.

Current status of proposed/listed ESUs under environmental baseline within the action area. SONC coho and KMP steelhead adults returning to Elk Creek have been closely monitored since the installation of a trap-and-haul facility at Elk Creek Dam in 1992. Satterthwaite and Leffler (1997) summarized these returns and monitored SONC coho spawning distribution above the damsite by counting redds and determining presence/absence of coho fry. They found that the four year average (1993-94 to 1996-97) of SONC coho adults returning to the damsite was 9.2% (76-349 fish) of the annual SONC coho adults counted going over Gold Ray Dam 28 miles downstream on the mainstem Rogue River (756-3,516 fish). The five year average (1992-93 to 1996-97) of KMP steelhead adults returning to the damsite was 2.2% (112-493 fish) of the annual KMP steelhead adults counted going over Gold Ray Dam (5,541-14,144 fish). Coho redds and fry were found in Elk Creek and four of the five tributaries that were surveyed above the damsite, indicating wide distribution of coho adults. Steelhead redds and fry were not surveyed.

Based on the best information available on the current status of the SONC coho and KMP steelhead ESUs throughout their ranges (Attachment 1) and within the action area, the information available regarding population status, population trends, and genetics (see Attachment 2), and the poor environmental baseline conditions within the action area, NMFS concludes that not all of the biological requirements of SONC coho and KMP steelhead within the action area are currently being met under the environmental baseline.

V. Analysis of Effects

A. Effects of Proposed Action. The effects determinations in this opinion were made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting effects of actions on them. This process is described in the document "Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996). This assessment method was designed for the purpose of providing adequate information in a tabular form for NMFS to determine the effects of actions subject to consultation. The effects of actions are expressed in terms of the expected effect (restore, maintain, or degrade) on each of approximately 17 aquatic habitat factors in the project area, as described in the "checklist for documenting environmental baseline and effects of the action" (checklist) completed for each action.

The results of the completed checklist for the proposed action provides a basis for determining the overall effects on the environmental baseline in the action area. The action covered in this opinion was shown to restore most of the environmental indicators over the long-term (more than one year) that

could potentially be affected by the proposed project (see Table 1 below). Sediment inputs to Elk Creek are likely to be increased by the project due to inwater work, but these should be limited to the short-term. The primary long-term benefit of the project is the restoration of fish passage at this site. The project also includes restoration of approximately 5,000 feet of the channel through realignment of Elk Creek within the project area to its original alignment and gradient, as well as placement of instream structures, thus Habitat Elements and Channel Condition indicators will be restored. Streambanks will be restored in within the project area (i.e., the 5,000 feet of Elk Creek channel) by revegetation and other erosion control measures, contributing to restoration of water quality (improved temperature) as well as instream habitat and channel condition. Nevertheless, short-lived adverse effects, such as temporary increases in sediment, blasting of concrete into the water, and instream activity have the potential to result in incidental take of SONC coho and KMP steelhead both during and for a short time after the project.

B. Critical Habitat. SONC coho critical habitat has been proposed (November 25, 1997; 62 FR 62741). SONC coho proposed critical habitat encompasses accessible reaches of all rivers (including estuarine areas and tributaries) between the Mattole River in California and the Elk River in Oregon, including all waterways and substrate below longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for at least several hundred years) except. Proposed critical habitat also includes 300 foot riparian buffers along both sides of these waterways. Because the proposed critical habitat is inclusive of the Elk Creek project action area, and the above description of the effects of the proposed action includes habitat effects, a separate description of the effects of the project on proposed critical habitat here is not necessary.

Table 1. Summary checklist of environmental baseline and effects of Elk Creek dam removal on relevant indicators (short-term refers to one year or less).

	ENVIRONMENTAL BASELINE			EFFECTS OF THE ACTION(S)		
PATHWAYS:						
INDICATORS	Properly[1] Functioning	At Risk[1]	Not Propr.[1] Functioning	Restore[1]	Maintain[1]	Degrade[1]
Water Quality:						
Temperature		X		X		
Sediment		X		X long-term		X short-term
Chem. Contamination	X				X	
Habitat Access:						
Physical Barriers			X	X		
Habitat Elements:						
Substrate			X	X		
Large Woody Debris			X	X		
Pool Frequency			X	X		
Pool Quality			X	X		
Off-channel Habitat			X	X		
Refugia			X	X		
Channel Condition:						
Width/Depth Ratio			X	X		
Streambank Cond.			X	X		
Floodplain Connectivity			X	X		
Flow/Hydrology:						
Peak/Base Flows		X			X	
Drainage Network Increase		X			X	
Watershed Conditions:						
Road Dens. & Loc.			X		X	
Disturbance History			X		X	
Riparian Reserves		X		X		

[1] These three categories of function ("properly functioning", "at risk", and "not properly functioning") and the three effects ("restore", "maintain", and "degrade") are defined for each indicator in NMFS (1996).

C. Cumulative Effects. "Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." 50 CFR 402.02. The action area for this project includes The action area for this project includes the originally planned pool area for Elk Creek Dam Reservoir, the partially completed dam structure itself, Elk Creek downstream of the dam, and all sections of the Elk Creek watershed what would be affected by the project such as the access road and the work area. Historically, agriculture, livestock grazing, forestry and other activities on non-federal land in the Upper Rogue River Basin have contributed substantially to temperature and sediment problems in this area's SONC coho and KMP steelhead habitat. This is true of the Elk Creek watershed, primarily due to a high percentage of non-federal land at lower elevations, high road densities, and water withdrawals. Conditions on and activities within non-Federal riparian areas along stream reaches downstream of the Federal land presently exert a greater influence on river temperatures and probably contribute more sediment to the habitat of SONC coho and KMP steelhead in the Elk Creek subbasin than the Federal land.

Significant improvement in reproductive success of SONC coho and KMP steelhead outside of Federal land is unlikely without changes in agricultural, forestry, and other practices occurring within non-Federal riparian areas in the Elk Creek watershed. NMFS is not aware of any future new (or changes to existing) State and private activities within the action area that would cause greater impacts to listed species than presently occurs. In fact, now that SONC coho and KMP steelhead are listed as threatened, NMFS assumes that non-Federal land owners will take steps to curtail or avoid land management practices that would result in the take of this species. For actions on non-Federal lands which the landowner or administering non-Federal agency believes are likely to result in adverse effects to SONC coho or their habitat, the landowner or agency should work with NMFS to obtain the appropriate ESA section 10 incidental take permit, which requires submission of a habitat conservation plan. If a take permit is requested, NMFS would likely seek project modifications to avoid or minimize adverse effects and taking of listed fish. Until improvements in non-Federal land management practices are actually implemented, NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

VI. Conclusion

The proposed partial removal of the uncompleted Elk Creek Dam considered in this Biological Opinion, as described in the BA, is not likely to jeopardize the continued existence of SONC coho or KMP steelhead, or result in the destruction or adverse modification of SONC coho proposed critical habitat. NMFS used the best available scientific and commercial data to apply its jeopardy analysis (described in Attachment 2), when analyzing the effects of the proposed actions on the biological requirements of the species relative to the environmental baseline (described in Attachment 1) , together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed

action and found that it would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment impacts, and possibly cause direct incidental take of SONC coho or KMP steelhead during inwater work. However, the proposed action will restore fish passage and aquatic habitat over the long term, and significantly benefit SONC coho, KMP steelhead, and SONC coho proposed critical habitat in Elk Creek.

VII. Reinitiation of Consultation

Consultation must be reinitiated if: the amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect the listed species in a way not previously considered; the action is modified in a way that causes an effect on the listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

Based on the information in the BAs, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion. To ensure protection for a species assigned an unquantifiable level of take, reinitiation of consultation is required: (1) if any action is modified in a way that causes an effect on the listed species that was not previously considered in the BAs and this Biological Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 C.F.R. 402.16).

VIII. References

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion in addition to the BA.

Busby, P.J., T.C. Wainwright, and R.S. Waples. 1994. Status review for Klamath Mountains Province steelhead. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-19. 130 pages.

Busby, P.J., T.C. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-27, 261 p.

NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon.

Satterthwaite, T.D. and R.R. Leffler. 1997. Rogue Basin Fisheries Evaluation: Effects of Elk Creek Dam on migratory salmonids in Elk Creek, annual progress report. Oregon Department of Fish and Wildlife, Portland, Oregon.

Weitcamp, L.A., T.C. Wainwright, G.J. Bryant, G.B. Milner, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status review of coho salmon from Washington, Oregon, and California. U.S. Dep. Commer., NOAA Tech Memo. NMFS-NWFSC-24, 258 p.

IX. Incidental Take Statement

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of the Take

The NMFS anticipates that the action covered by this Biological Opinion (partial removal of Elk Creek Dam) has more than a negligible likelihood of resulting in incidental take of SONC coho and KMP steelhead because of detrimental effects on suspended sediment levels and the potential for direct incidental take during blasting and inwater work. Effects of management actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on the species' habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Biological Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the BAs, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Biological Opinion.

B. Reasonable and Prudent Measures

NMFS believes that the following reasonable and prudent measure is necessary and appropriate to minimize the incidental take of SONC coho and KMP steelhead due to the partial removal of Elk Creek Dam:

1. Monitor SONC coho and KMP steelhead habitat and populations in the action area during and after the partial removal of Elk Creek Dam.

C. Terms and Conditions

1. To implement the reasonable and prudent measure desribed above, the Corps shall comply with the following terms and conditions:

    a. Monitor sediment before the construction phase of the removal in the action to provide a baseline for comparison with post-project sediment data. Survey six locations scattered upstream, within, and downstream of the project to provide channel cross-sections, photographic recording, sediment sampling and gradation analysis. Also survey an additional approximately twelve locations upstream, within, and downstream of the project to provide photographic records and field observations.

    b. Following construction, repeat the sediment surveys described above as frequently as necessary for at least five years after project completion. The purpose of the sediment monitoring is to provide a qualitative analysis of sediment dynamics, not to determine the quantity of sediment produced by the project. Monitoring will provide detail to analyze the response of Elk Creek to project implementation and to determine corrective actions if adverse sedimentation is being caused by any aspect of the project.

    c. During the construction phase of the project, monitor turbidity in Elk Creek 100 feet above and below the work every four hours during inwater work, and for a period of two weeks following the last inwater work. Any activity causing turbidity in exceedance of 10% greater than background turbidity shall be immediately modified to reduce turbidity. If turbidity in exceedance of 10% greater than background occurs, the monitoring frequency shall be every two hours until the problem is resolved.

    d. Following construction, turbidity shall be monitored in Elk Creek above and below the project to help differentiate turbidity attributable to the watershed above the project versus that from the project.

    e. After completion of the construction phase of the project, indirectly monitor SONC coho passage success through the project area by determining the upstream limits of SONC coho fry above the project in the upper Elk Creek watershed. The Oregon

Department of Fish and Wildlife (ODFW) surveyed streams in this area in 1996 and 1997, and found that the upstream limits of SONC coho fry did not vary widely between years, thus these limits can be used used for comparison with future data. Determine the upstream limits of SONC coho fry distribution with snorkel surveys on an annual basis in June or July from 1999 to at least 2004.

f. Submit an annual report on all sediment, turbidity, and fish distribution monitoring results by December 31 starting in 1999.